

NYE-DT 31

Apache

APA-NYSE
Rating
Market Perform
Price: Sep 7
\$55.13
Target
\$60.00
YTD Rtn
11%

High on the Alpine

Bottom Line: Apache's announcement of having secured 307,000 net acres in the Southern Delaware Basin could represent a significant source of future production inventory, but little is known about the area termed Alpine High. While peers are paying \$20-40,000 per acre in more established Permian areas, Apache accumulated this position at only \$1,300 per acre. This report takes an initial look at Alpine High by reviewing neighboring historical industry activity and quantifying what the discovery could mean for Apache in terms of valuation and returns.

Key Points

Activity poised to accelerate. Alpine High represents a significant investment and future results from this early stage play will be closely watched given the scale of the position. Apache estimates 2,000-3,000 locations in the Woodford and Barnett alone, which could support a six-year program over 20 years. Apache plans to accelerate drilling in the Alpine High, resulting in its 2016 capex increasing \$0.2B to \$2.0B. The minimum retention program will consist of 45 rigs and 60-80 wells in the Woodford and Barnett only, which likely equates to ~\$400-500mm per year including infrastructure. We're increasing 2017/18 production estimates by 3/5% to account for Alpine High activity, while capex is increased by \$270/340mm. We're using the low end of the EUR range (1.62Bcfe/1,000') due to limited production history and given the midpoint (2.81Bcfe/1,000') and high end (4.0Bcfe/1,000') figures supplied by Apache appear aggressive when compared to other production plays like the Marcellus and Utica.

Alpine High Quickly Priced into Shares, Still Plenty of Risk. Assuming the low end for EURs, we estimate an after-tax IRR of 20% with an NPV per location of \$1.0mm (\$1.61Bboe). Assuming a six-year development program and 2,000 locations, BMO/NYMEX price decks derive a total after-tax NAV of \$1.0/0.39B, or \$3,309/\$1,257 per acre. At the EUR midpoint, we estimate a valuation of \$2.2-3.3B, or \$7,200-10,600 per acre. And at the high end, our valuation is \$4.5-5.8B, or \$13,000-17,800 per acre. Apache's stock price already reflects \$1.3B of value for Alpine High given today's outperformance. We think yesterday's stock move largely reflects short covering, as historically, being short E&P stocks in the early days of a new exploration play has proved a difficult strategy. That said, fundamentals will ultimately prevail and future stock performance will be determined by Apache's development and development success, project-level returns, and growth.

Key Changes

Rating	Target	Estimates	2016E	2017E
Mkt	\$60.00	EPS	\$(0.51)	\$1.96
		Previous	\$(0.52)	\$1.93
		CFPS	\$8.03	\$11.16
		Previous	\$8.02	\$10.97
		Oil (Mbb/d)	284	290
		Previous	284	288

BMO  **Capital Markets**

Oil & Gas - E&P

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Company Data			
Dividend	\$1.00	Share O/S (mm)	379.4
Yield	1.8%	Market Cap (mm)	\$20,918
EV (mm)	\$25,498	Net Debt (mm)	\$6,990

BMO Estimates			
(FY-Dec)	2015A	2016E	2017E
EPS	\$(0.27)	\$(0.51)↑	\$1.96↑
CFPS	\$7.95	\$8.03↑	\$11.16↑
Oil (Mbb/d)	284	284↑	290↑
Total (Mboe/d)	535.1	532.9↑	539.4↑
EBTDA (mm)	\$3,854	\$3,543↑	\$4,971↑

Consensus Estimates			
(FY-Dec)	2015A	2016E	2017E
EBTDA (mm)		3,069	4,382

Valuation			
(FY-Dec)	2015A	2016E	2017E
EV/EBTDA	6.8x	7.3x	5.2x
P/E	NM	NM	28.1x
Debt/EBTDA	1.9x	2.0x	1.4x

QTR EPS	Q1	Q2	Q3	Q4
2015A	\$5.93	\$0.22	\$(0.05)	\$(0.06)
2016E	\$(0.83)	\$(0.26)	\$0.25	\$0.33
2017E	\$0.37	\$0.43	\$0.46	\$0.70

Our Thesis

We rate Apache Market Perform. We view Permian inventory as mid-tier, while international assets (North Sea and Egypt) deliver strong cash margins, resulting in a defensive asset base. Apache trades below large cap peers, but improved capital efficiencies and upgraded Permian inventory could mean a turning point for the stock.

Apache Block Summary Mode

Commodity Assumptions	2015A	2016E	2017E
WT O (US\$/bb)	\$48.74	\$44.49	\$53.08
Brent (\$US/bb)	52.65	45.42	55.58
Henry Hub (US\$/Mcf)	\$2.65	\$2.48	\$3.25
Production	2015A	2016E	2017E
Oil Production (Mbb/d)	284.4	283.7	289.9
Y/Y Change	-11.3%	-0.2%	2.2%
Gas Production (MMcf/d)	1,130.9	1,123.7	1,131.0
Y/Y Change	-27.2%	-0.6%	0.7%
NGL Production (Mbb/d)	62.2	62.0	61.0
Y/Y Change	-7.2%	-0.4%	-1.6%
Total Production (MBoe/d)	535.1	532.9	539.4
Y/Y Change	-17.2%	-0.4%	1.2%
Per Unit Metrics (\$/BOE)	2015A	2016E	2017E
Pre-Hedge Realization	\$32.45	\$28.87	\$35.10
Lease Operating Expense	9.49	7.06	6.47
Oil and Natural Gas Taxes	1.44	0.86	1.02
GP&T	1.08	1.04	0.89
DD&A	19.74	13.69	13.82
G&A	1.93	2.01	2.00
Interests	1.53	2.09	1.99
Income Statement (\$MM)	2015A	2016E	2017E
Total Revenues	6,366	5,697	7,016
Adjusted Net Income	(102)	(194)	743
Diluted EPS - Adjusted	(0.27)	(0.51)	1.96
EBITDA	3,854	3,543	4,971
Cash Flow Statement (\$MM)	2015A	2016E	2017E
Discretionary Cash Flow	3,004	2,565	4,230
Capex	(4,811)	(2,170)	(3,552)
Cash Flow From Investments	676	(2,093)	(3,552)
Reinvestment Rate (Capex/DCF)	161%	86%	84%
Balance Sheet (\$MM)	2015A	2016E	2017E
Cash	\$1,467	\$1,688	\$1,867
PP&E	14,119	19,946	20,778
Total Assets	18,842	24,636	25,647
Debt	8,777	8,719	8,719
Equity/Minority Interests	4,228	8,772	9,239
Total Liabilities and Equity	18,842	24,636	25,647
Net Debt/EBITDA	1.9x	2.0x	1.4x

Source: BMO Capital Markets, Company Reports

New Scenarios

Valuation

We estimate fair value of APA shares using several methodologies, including historical multiples of EBITDA, average trading multiples of peers, and absolute value using an after-tax net asset value (NAV) approach. Our Target Price of \$60 represents 9% upside to the current stock price and equates to 6.0x our 2017 EBITDA estimate and 1.1x our NAV.

Upside Scenario

65.00

A \$5.00/\$0.25 (Oil/Gas) positive change to our short- and long-term commodity price assumptions results in a 11% and 25% increase to our 2018 EBITDA and NAV estimates, respectively. Applying the same EV/EBITDA and P/NAV multiples used for our Target Price, we arrive at an Upside Scenario price of \$65.

Downside Scenario

45.00

A \$5.00/\$0.25 (Oil/Gas) negative change to our short- and long-term commodity price assumptions results in a 11% and 26% decrease in our 2018 EBITDA and NAV estimates, respectively. Applying the same EV/EBITDA and P/NAV multiples used for our Target Price, we arrive at a Downside Scenario price of \$45.



Company Description

Apache Corporation was established in Minnesota in 1954. Apache's U.S. operations include the Outer Continental Shelf, Anadarko Basin, Permian Basin, the Texas-Louisiana Gulf Coast and East Texas. International operations are located in Canada, offshore Australia, Egypt, the North Sea, and Argentina.



APA-NYSE
Research



Industry
Research



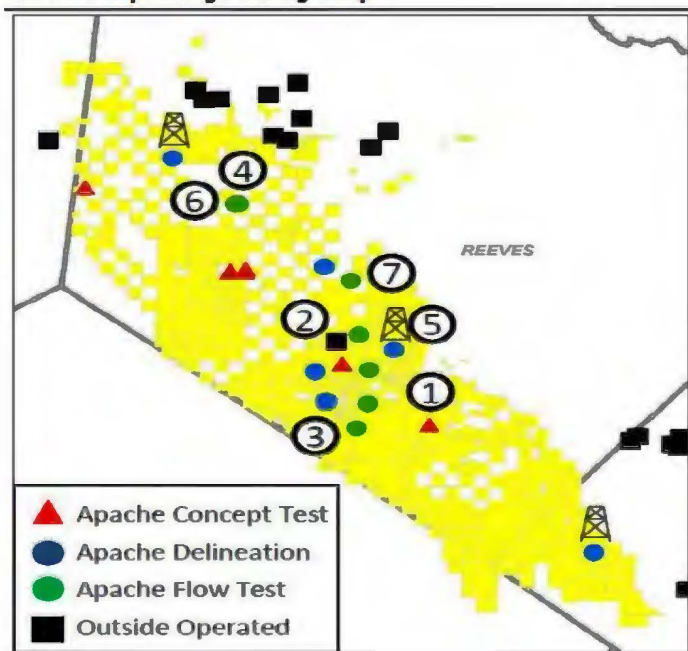
Company
Mode

High on the Alpine

Apache's announcement of having secured 307,000 net acres in the Southern Delaware Basin could represent a significant source of future liquids-rich inventory, but little is known about the area termed Alpine High, with minimal historical industry activity around the position. While peers are paying \$20,000-40,000 per acre in more established Permian areas, Apache accumulated this position at only \$1,300 per acre. Even so, Alpine High still represents a significant investment and future results from this early-stage play will be closely watched given the scale of the position. The primary target in the Southern Delaware Basin has been the Wolfcamp, although this zone thins and is shallower toward the Reeves and Jeff Davis County line. Apache's primary target appears to be the Woodford and Barnett, which produce a high percentage of natural gas, although the company has drilled one Wolfcamp and one Bone Spring well, which have higher initial oil rates. These wells are in addition to six Woodford and one Barnett well, all of which are producing limited quantities due to infrastructure constraints. In total, Alpine High has 4,000-5,000' of stacked pay across these intervals (also Pennsylvanian) and estimated 2,000-3,000 locations in the Woodford and Barnett alone. This level of inventory could support a six-rig program over 20 years.

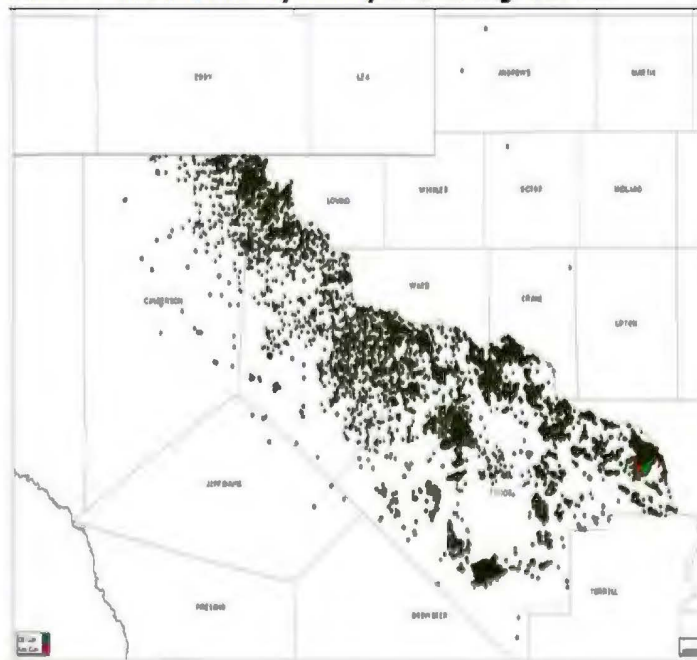
Based on these results, Apache plans to accelerate delineation and development of the Alpine High, resulting in its 2016 capital budget increasing \$0.2B to \$2.0B, of which 25% is dedicated to Alpine High. The minimum retention program will consist of 4-5 rigs and 60-80 wells in the Woodford and Barnett only, which likely equates to ~\$400-500 mm per year including infrastructure (40% of 2016 capex is infrastructure). We are increasing our 2017/18 production estimates by 3/5% (mostly natural gas) to account for Alpine High activity, while capex is increased by \$270/340 mm. We're using the low-end of the EUR range (1.62Bcfe/1,000') due to limited production history and given the mid-point (2.81Bcfe/1,000') and high-end (4.0Bcfe/1,000') figures supplied by Apache appear aggressive when compared to other liquids-rich plays like the Marcellus and Utica.

Exhibit 1: Alpine High Acreage Map



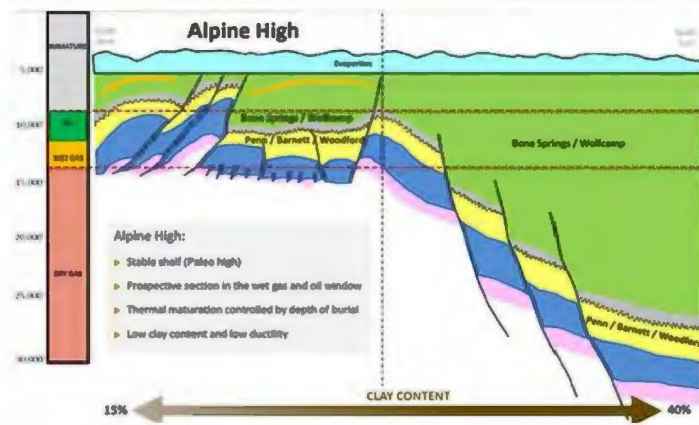
Source: Company reports

Exhibit 2: Minimal Industry Activity Near Acreage Position



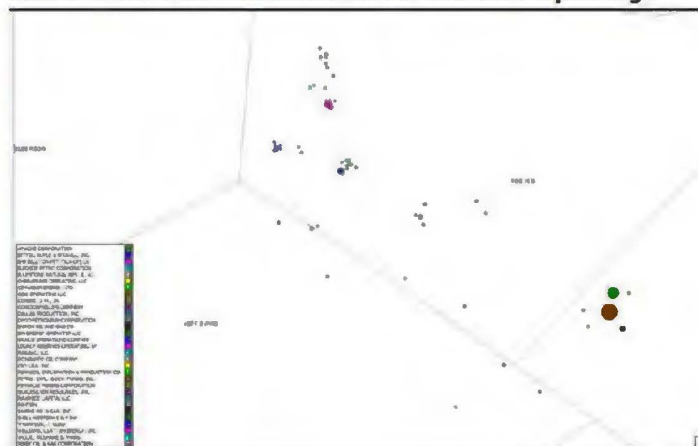
Source: HPDI

Exhibit 3: Geology of the Southern Delaware Basin



Source: Company reports

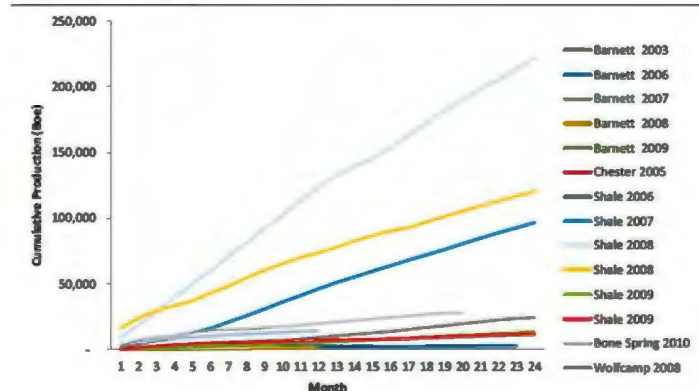
Exhibit 4: Historical Peak Month Oil Per Well Near Alpine High



Source: HPDI

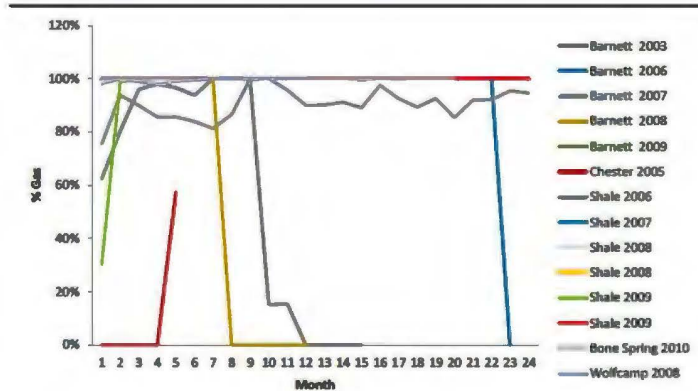
As shown in Exhibit 2, minimal historical production has been achieved near Alpine High, although we found production history on several horizontal wells in this area over the past 10 years. We plot cumulative production and natural gas as a percentage of total production in Exhibits 5 and 6. As shown, only three wells have a meaningful amount of production history and were drilled in 2007-08, with the targeted identified as "Shale." As shown in Exhibit 6, these three wells were 100% natural gas.

Exhibit 5: Cumulative Production History from Horizontals Drilled Near Alpine High



Source: BMO Capital Markets, HPDI.

Exhibit 6: Gas Mix for Horizontals Drilled Near Alpine High



Source: BMO Capital Markets, HPDI

While industry hasn't achieved much success at Alpine High, Apache's initial results are more promising. No production data is filed with the TRRC (W2 IP rates or monthly production), although Apache reported initial production rates on nine wells (Exhibit 7). The well names are in the same numbered order as shown on the map in Exhibit 1. Mont Blanc 1H and 3H carry the highest rates (16:1) and are near the northern part of the Alpine High acreage, while Ortlor 1H has the lowest rate and is near the southern part of Reeves along the Jeff Davis County border. Wells 1, 2, 5, and 7 have achieved similar rates and are near the eastern part of Alpine High. That said, it's clearly too early to begin identify sweet spots and, interestingly, Mont Blanc 1H and 3H have varying oil cuts.

Exhibit 7: Alpine High Initial Production Rates

	Well	Reservoir	Gas	Oil	Boe	IP Rate 16:1	% Oil	Yield	NGLs
1	Spanish Trail 1H	Woodford	6,484	108	1,189	513	9%	158	1,024
2	Weissmies 1H	Woodford	7,122	281	1,468	726	19%	139	990
3	Ortler 1H	Woodford	1,752	16	308	126	5%	140	245
4	Mont Blanc 1H	Woodford	17,068	24	2,869	1,091	1%	88	1,502
5	Cheyenne 1H	Woodford	6,517	227	1,313	634	17%	159	1,036
6	Mont Blanc 3H	Barnett	11,400	508	2,408	1,221	21%	148	1,687
7	Fox State 1H	Woodford	6,744	72	1,196	494	6%	134	904
8	Redwood 1P	Wolfcamp	4,500	700	1,450	981	48%		
9	Mont Blanc 2H	Bone Spring	1,500	854	1,104	948	77%		

Source: BMO Capital Markets, company reports

We summarized Apache's EUR and D&C disclosure in Exhibit 8 for normally pressured (low) and over-pressured (high) settings, and took the mid-point of each. As shown, Apache's type curve assumes 11-12% oil, while EUR per lateral foot ranges from 1.62-4.0Bcfe. In development mode, D&C is expected to average \$1.0-1.5 mm per 1,000 lateral foot, with infrastructure being an additional cost. Apache plans to install temporary processing capacity, evaluate midstream development and market access option in 2H16, while build out in-field processing and gathering in 2017. Apache also mentioned establishing Alpine High midstream enterprise. Excluding infrastructure, the implied F&D (25% royalty) is \$0.49-0.80Mcfe, putting the Alpine High on par with the best of the Marcellus/Utica.

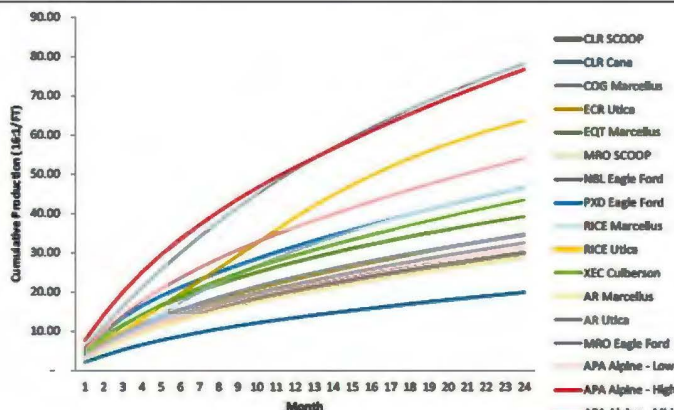
Exhibit 8: Alpine High Low and High Case EUR, D&C, F&D

	Woodford/Barnett (4,100' Lateral)						
	Low	Mid	High		Low	Mid	High
EUR				D&C			
Oil	120	220	320	To Date (\$MM)	\$ 5.5	\$ 6.8	\$ 8.0
NGL	320	535	750	Development (\$MM)	\$ 4.0	\$ 5.0	\$ 6.0
Gas	4,000	7,000	10,000	To Date / Ft	\$ 1,341	\$ 1,646	\$ 1,951
Total (MBoe)	1,107	1,922	2,737	Development / Ft	\$ 976	\$ 1,220	\$ 1,463
Total (Bcfe)	6.6	11.5	16.4				
% Oil	11%	11%	12%	F&D			
% NGL	29%	28%	27%	To Date (\$/Boe)	\$ 6.63	\$ 4.68	\$ 3.90
% Gas	60%	61%	61%	Development (\$/Boe)	\$ 4.82	\$ 3.47	\$ 2.92
EUR/Ft (Boe)	270	469	667	To Date (\$/Mcfe)	\$ 1.10	\$ 0.78	\$ 0.65
EUR/Ft (Bcf)	1.62	2.81	4.00	Development (\$/Mcfe)	\$ 0.80	\$ 0.58	\$ 0.49

Source: BMO Capital Markets, company reports

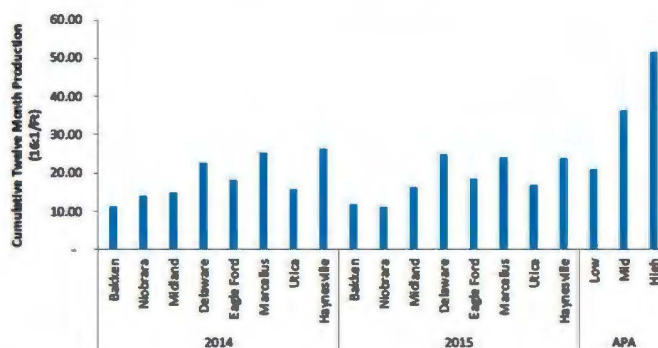
With no public production data available, we leveraged type curves from other covered companies in the SCOOP, Marcellus, Utica, and Eagle Ford as Apache has noted that its Alpine High wells are tracking type curves for these plays. In Exhibit 9, we present these curves (BMO estimates and 16:1/Ft) and compared them to Apache's low-, mid-, and high-case EUR. As shown, the low case is comparable to CLR/MRO SCOOP, AR/EQT/ECR Marcellus/Utica, and NBL/MRO Eagle Ford. The mid-point would be above XEC Delaware, PXD Eagle Ford, and RICE Marcellus, while the high end would be in line with COG Marcellus. As such, we feel using the low end is appropriate until more production history is realized. Also, Exhibit 10 compares first-year cumulative production (16:1/Ft) to that of other shale plays and reaches a similar conclusion.

Exhibit 9: BMO Type Curves for Alpine High and Other Liquids-Rich Plays



Source: BMO Capital Markets, HPDI

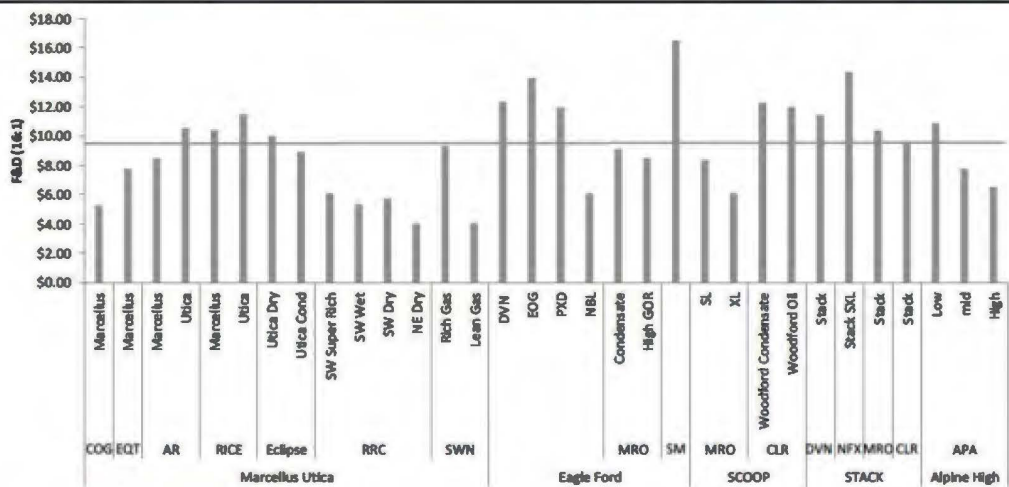
Exhibit 10: Alpine High Low-Case First-Year Cum Is Comparable to the Average of Other Shale Plays



Source: BMO Capital Markets, HPDI

In Exhibit 11, we compared Apache's low-, mid-, and high-case implied F&D (16:1) to Marcellus, Utica, Eagle Ford, SCOOP, and STACK operators based on public disclosure. While differentials and operating costs will vary, we view this as directionally a methodology to gauge rate of return based on company disclosure. As shown, the low end of Apache's EUR range would imply a F&D (16:1) slightly above the average, while the mid-point would be below. The high-end EUR would imply an F&D that suggests returns competitive with the best of these plays.

Exhibit 11: Marcellus, Utica, Eagle Ford, SCOOP, STACK, Alpine High Implied F&D (16:1)



Source: BMO Capital Markets, company reports

While it's much too early to begin thinking about spacing, many liquids-rich gas plays are ultimately developed on 1,000' inter-lateral spacing. While Apache will likely have the potential for longer laterals, we've assumed the location count is based on lateral lengths consistent with published well economics. As such, we back into ~7,500 gross locations assuming both Barnett and Woodford are prospective across Alpine High. Apache appears to risk its acreage by one-third and provides no credit for the Wolfcamp or Bone Spring, assuming the mid-point of its 2,000-3,000 location count.

Exhibit 12: Alpine High Acreage Risking and Location Assumptions

Formation	Unrisked Acreage		Risked Acreage		Risk Factor	Lateral	Spacing per Section			Unrisked Locations		Risked Locations	
	Gross	Net	Gross	Net			Spacing	Wells	Acres	Gross	Net	Gross	Net
Woodford	352,000	307,000	117,920	102,845	34%	4,100	1,000	6.8	94	3,740	3,262	1,253	1,093
Barnett	352,000	307,000	117,920	102,845	34%	4,100	1,000	6.8	94	3,740	3,262	1,253	1,093
										7,480	6,523	2,506	2,185
											Low		2,000
											High		3,000
											Mid		2,500

Source: BMO Capital Markets, company reports

Based on limited information, we built a generic well economics model for Alpine High using the low-end of Apache's EUR range and targeted \$4 mm D&C (plus 10% for infrastructure). Our model derives an 869MBoe three-stream EUR and is based on a 30 year economic life and 8% terminal decline. We think most E&Ps provide 3P EURs based on 50 years and 5-6%, and if we used these assumptions our EUR would be 1,100MBoe, although the difference has minimal PV impact. We use BMO's commodity price forecast. Implied F&D is \$6.75/Boe for 11% oil. Lease operating expense is <\$5/Boe over the life of the well, while production taxes are tailored to Texas regulations. We include income taxes and use a 10% discount rate. Our model derives an after-tax NPV per well of ~\$1.0 mm. Total NPV would be influenced by development timing, contango in BMO's commodity price forecast, while tax basis information is limited to acreage costs.

Exhibit 13: Alpine High Well Economics Model (Woodford/Barnett Low Case)

Appendix 15A: High-Grade Economics Model (Woodbury, Barnett Low Cost)															
Year	Gross Production				Net Production				Realizations			Net Sales			
	Oil	Gas	NGL	Boe	Oil	Gas	NGL	Boe	Oil	Gas	NGL	Oil	Gas	NGL	
1	21.1	702.3	56.2	194.3	15.8	526.7	42.1	145.7	\$ 46.53	\$ 3.01	\$ 11.95	735	1,583	504	
2	10.2	340.3	27.2	94.2	7.7	255.3	20.4	70.6	\$ 53.70	\$ 2.99	\$ 12.95	411	763	264	
3	7.4	248.2	19.9	68.7	5.6	186.1	14.9	51.5	\$ 59.50	\$ 3.05	\$ 13.77	332	568	205	
4	5.9	196.8	15.7	54.5	4.4	147.6	11.8	40.8	\$ 62.00	\$ 3.18	\$ 13.94	275	469	165	
5	5.0	165.7	13.3	45.8	3.7	124.3	9.9	34.4	\$ 62.00	\$ 3.30	\$ 14.04	231	410	140	
6	4.3	142.7	11.4	39.5	3.2	107.0	8.6	29.6	\$ 62.00	\$ 3.30	\$ 14.04	199	353	120	
7	3.8	125.8	10.1	34.8	2.8	94.3	7.5	26.1	\$ 62.00	\$ 3.30	\$ 14.04	175	311	106	
8	3.4	113.3	9.1	31.4	2.6	85.0	6.8	23.5	\$ 62.00	\$ 3.30	\$ 14.04	158	281	95	
9	3.1	103.2	8.3	28.6	2.3	77.4	6.2	21.4	\$ 62.00	\$ 3.30	\$ 14.04	144	255	87	
10	2.8	94.6	7.6	26.2	2.1	70.9	5.7	19.6	\$ 62.00	\$ 3.30	\$ 14.04	132	234	80	
11	2.6	87.0	7.0	24.1	2.0	65.3	5.2	18.1	\$ 62.00	\$ 3.30	\$ 14.04	121	215	73	
12	2.4	80.2	6.4	22.2	1.8	60.1	4.8	16.6	\$ 62.00	\$ 3.30	\$ 14.04	112	198	68	
13	2.2	73.9	5.9	20.5	1.7	55.4	4.4	15.3	\$ 62.00	\$ 3.30	\$ 14.04	103	183	62	
14	2.0	68.2	5.5	18.9	1.5	51.1	4.1	14.1	\$ 62.00	\$ 3.30	\$ 14.04	95	169	57	
15	1.9	62.9	5.0	17.4	1.4	47.2	3.8	13.1	\$ 62.00	\$ 3.30	\$ 14.04	88	156	53	
16	1.7	58.1	4.7	16.1	1.3	43.6	3.5	12.1	\$ 62.00	\$ 3.30	\$ 14.04	81	144	49	
Total	79.9	2,663.4	213.1	736.9	59.9	1,997.5	159.8	552.6	\$56.63	\$3.15	NA	3,393	6,292	2,128	
After	14.3	477.3	38.2	132.1	10.7	358.0	28.6	99.0	\$62.00	\$3.30	\$14.04	666	1,181	402	
Total	94.2	3,140.7	251.3	868.9	70.7	2,355.5	188.4	651.7	\$57.44	\$3.17	NA	4,059	7,474	2,530	

Year	Operating Costs		Production Tax		Transportation		G&A	D&C Cost	Pre-tax Cash Flow	DD&A MACRS	Net Income	Income Taxes	After-tax Cash Flow	Discounted Cash Flow
	Amount	\$/Boe	Amount	\$/Boe	Amount	\$/Boe								
1	230	1.58	234	1.61	-	-	-	4,400	(2,042)	157	2,200	-	(2,042)	(2,186)
2	155	2.19	120	1.70	-	-	-	-	1,164	270	895	-	1,164	1,002
3	135	2.63	92	1.79	-	-	-	-	878	193	685	151	727	573
4	125	3.06	75	1.85	-	-	-	-	708	138	570	199	508	363
5	118	3.44	65	1.89	-	-	-	-	597	98	499	175	422	275
6	114	3.84	56	1.89	-	-	-	-	503	98	405	142	361	213
7	110	4.22	49	1.89	-	-	-	-	433	98	335	117	316	170
8	108	4.57	45	1.89	-	-	-	-	382	50	333	116	266	130
9	105	4.92	41	1.89	-	-	-	-	340	-	340	119	221	98
10	104	5.28	37	1.89	-	-	-	-	305	-	305	107	198	80
11	102	5.65	34	1.89	-	-	-	-	274	-	274	96	178	65
12	101	6.05	32	1.89	-	-	-	-	246	-	246	86	160	53
13	99	6.48	29	1.89	-	-	-	-	220	-	220	77	143	43
14	98	6.94	27	1.89	-	-	-	-	196	-	196	69	128	35
15	97	7.43	25	1.89	-	-	-	-	175	-	175	61	114	28
16	96	7.96	23	1.89	-	-	-	-	155	-	155	54	101	23
Total	1,897	3.43	984	1.78	-	-	-	4,400	4,534	1,100	7,834	1,569	2,965	965
After	1,277	12.89	188	1.90	-	-	-	--	784	-	784	280	504	83
Total	3,174	4.87	1,172	1.80	-	-	-	4,400	5,318	1,100	8,618	1,849	3,468	1,048

Source: BMO Capital Markets.

In Exhibit 14, we present estimated single well economics using the assumptions outlined above. As shown, we estimate an after-tax IRR of 20% with an NPV per location of \$1.0mm (\$1.61Boe). We also include scenarios using the mid- and high end of the EUR range and a NYMEX price deck. Also, in Exhibit 14, we include a net asset value estimate for Alpine High based on a six-rig program and 2,000 net locations. Assuming the low end for EURs, BMO/NYMEX price decks derive a total after-tax valuation of \$1.0/0.39B, or \$3,309/\$1,257 per acre. At the mid-point, we estimate a total after-tax valuation of \$2.2-3.3B, or \$7,200-\$10,600 per acre. And at the high end, our valuation is \$4-5.5B, or \$13,000-17,800 per acre. Apache's stock price already reflects \$1.3B of value for Alpine High based on today's outperformance.

Exhibit 14: Alpine High Well Economics and Project Net Asset Value

	Low EUR		Mid EUR		High EUR	
	BMO	NYMEX	BMO	NYMEX	BMO	NYMEX
Drill and complete cost (\$MM)	\$4.4	\$4.4	\$5.5	\$5.5	\$6.6	\$6.6
Royalty	25%	25%	25%	25%	25%	25%
EUR (MBoe)	869	869	1,503	1,503	2,137	2,137
Net EUR (MBoe)	652	652	1,127	1,127	1,603	1,603
NPV (\$MM)	\$1.0	\$0.4	\$3.7	\$2.7	\$6.3	\$4.8
NPV/Boe	\$1.61	\$0.67	\$3.27	\$2.36	\$3.92	\$3.02
IRR	20%	14%	42%	33%	59%	47%
Implied F&D Cost (\$/Boe)	\$ 6.75	\$ 6.75	\$ 4.88	\$ 4.88	\$ 4.12	\$ 4.12
Payback	1.8x	1.5x	2.5x	2.2x	3.1x	2.6x
Project DCF						
EUR (MMBoe)	1,735	1,735	3,002	3,002	4,268	4,268
Net EUR (MMBoe)	1,302	1,302	2,251	2,251	3,201	3,201
NPV (\$MM)	\$1,016	\$386	\$3,260	\$2,201	\$5,476	\$3,988
NPV/Well (\$MM)	\$0.51	\$0.19	\$1.63	\$1.10	\$2.74	\$2.00
NPV/Boe	\$0.78	\$0.30	\$1.45	\$0.98	\$1.71	\$1.25
IRR	22%	14%	43%	32%	60%	45%
Implied F&D Cost (\$/Boe)	\$7.04	\$7.04	\$5.00	\$5.00	\$4.17	\$4.17
NPV/Acre	\$ 3,309	\$ 1,257	\$ 10,619	\$ 7,170	\$ 17,837	\$ 12,990

Source: BMO Capital Markets

Exhibit 15: Apache Summary Financial Model

	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
ESP Production & Pricing																				
Production Volume:																				
Crude oil (MMbbls)	297.2	302.3	294.7	253.7	284.4	277.3	285.0	290.1	282.3	283.7	281.8	286.7	289.9	301.8	288.9	302.5	305.6	305.7	311.3	288.5
Natural gas (MMcfe)	1,137.8	1,191.7	1,162.2	1,032.8	1,130.9	1,135.5	1,223.3	1,134.5	1,101.4	1,133.7	1,104.0	1,120.7	1,120.7	1,141.0	1,101.0	1,163.8	1,185.5	1,188.9	1,206.7	1,188.2
NGLs (MMbbls)	55.0	62.8	63.8	67.2	62.2	64.9	63.2	60.8	59.1	62.8	59.2	60.5	61.5	62.9	61.8	64.6	66.6	68.0	69.7	67.2
Combined equivalent volumes (MMboe)	590.8	563.8	542.2	493.1	546.1	531.5	535.5	539.9	525.0	538.8	525.0	535.5	538.5	558.2	528.4	561.0	569.7	571.9	582.7	571.4
% Oil	50%	54%	53%	51%	53%	52%	52%	53%	54%	54%	53%	54%	54%	54%	54%	54%	54%	54%	53%	54%
Refineries (After Hedging)																				
Crude oil (MMbbls)	\$ 46.12	\$ 58.09	\$ 46.34	\$ 38.96	\$ 47.72	\$ 31.51	\$ 43.94	\$ 46.14	\$ 47.28	\$ 42.16	\$ 48.04	\$ 58.53	\$ 58.54	\$ 54.24	\$ 48.91	\$ 59.35	\$ 59.32	\$ 59.31	\$ 59.30	\$ 60.82
Natural gas (Bcf)	\$ 2.83	\$ 2.73	\$ 2.89	\$ 2.66	\$ 2.81	\$ 2.15	\$ 2.04	\$ 2.75	\$ 3.87	\$ 2.88	\$ 3.31	\$ 2.87	\$ 2.87	\$ 3.23	\$ 2.69	\$ 3.83	\$ 3.83	\$ 3.82	\$ 3.83	\$ 3.83
NGLs (MMbbls)	\$ 11.79	\$ 10.21	\$ 8.36	\$ 8.88	\$ 8.89	\$ 7.16	\$ 10.22	\$ 11.44	\$ 12.02	\$ 16.16	\$ 12.52	\$ 12.20	\$ 12.48	\$ 12.52	\$ 12.64	\$ 13.95	\$ 13.53	\$ 13.70	\$ 14.07	\$ 13.82
Combined equivalent (per boe)	\$ 38.86	\$ 68.88	\$ 51.61	\$ 38.81	\$ 32.46	\$ 21.81	\$ 28.46	\$ 31.56	\$ 33.19	\$ 35.87	\$ 34.16	\$ 34.40	\$ 34.68	\$ 37.08	\$ 36.19	\$ 38.80	\$ 38.70	\$ 38.82	\$ 38.89	\$ 38.78
Benchmark Price																				
Natural Gas - HH (Btu West)	\$ 2.97	\$ 2.67	\$ 2.73	\$ 2.34	\$ 2.86	\$ 1.99	\$ 1.96	\$ 2.75	\$ 3.32	\$ 2.48	\$ 3.75	\$ 3.89	\$ 3.00	\$ 3.26	\$ 2.35	\$ 3.25	\$ 3.25	\$ 3.25	\$ 3.25	\$ 3.25
Oil - NYMEX	\$ 46.95	\$ 57.84	\$ 46.52	\$ 42.04	\$ 48.74	\$ 33.41	\$ 45.36	\$ 48.00	\$ 49.00	\$ 44.68	\$ 50.50	\$ 53.00	\$ 53.00	\$ 55.80	\$ 48.88	\$ 61.88	\$ 61.00	\$ 61.88	\$ 61.00	\$ 61.88
Income Statement (\$ in millions)																				
ESP	1,638.8	1,562.0	1,572.0	1,221.0	1,603.8	1,607.0	1,386.0	1,580.5	1,628.1	1,794.7	1,637.7	1,704.5	1,736.8	1,537.4	1,799.9	2,047.7	2,080.6	2,115.6	2,150.8	2,191.8
Total revenues	1,838.9	1,877.9	1,898.9	1,288.9	1,888.9	1,888.9	1,888.9	1,888.9	1,888.9	1,887.7	1,704.5	1,736.8	1,736.8	1,537.4	1,799.9	2,047.7	2,080.6	2,115.6	2,150.8	2,191.8
Less operating expense	461.8	467.0	450.0	456.0	1,864.8	378.0	359.0	323.4	317.5	1,877.8	313.3	316.7	317.1	326.9	1,878.1	325.0	327.4	324.9	330.3	1,897.8
Gathering, processing, transportation	58.8	49.0	58.0	48.0	211.0	52.0	52.0	50.9	48.3	288.2	45.9	44.6	42.6	41.7	174.8	48.2	38.4	37.9	37.3	164.8
Depreciation	-	-	-	-	95.0	91.0	91.0	90.0	90.0	288.8	90.0	90.0	90.0	90.0	288.8	90.0	90.0	90.0	90.0	288.8
DDA	1,118.0	1,042.0	945.0	858.0	4,680.8	716.0	707.0	707.2	682.7	1,843.8	695.2	710.8	722.4	744.8	8,075.1	741.1	754.7	762.8	776.1	8,088.9
Investment	7,238.8	5,816.0	5,721.0	6,700	26,617.8	716.0	707.0	707.2	682.7	1,843.8	695.2	710.8	722.4	744.8	8,075.1	741.1	754.7	762.8	776.1	8,088.9
GSA	82.8	111.0	86.0	98.0	377.8	93.0	93.0	93.3	96.5	381.8	94.5	97.5	95.1	102.7	388.7	101.8	103.7	105.2	107.2	417.1
Other non-income	73.0	55.0	104.0	50.0	282.9	11.0	60.0	45.2	46.4	187.6	48.2	49.3	50.5	53.7	201.8	57.3	59.1	60.7	62.4	238.8
Taxes other than income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EBIT	(7,488.8)	(6,683.8)	(6,888.8)	(7,844.8)	(26,875.8)	(282.8)	(188.8)	(27.6)	(78.8)	(274.2)	(386.6)	(408.6)	(454.2)	(818.1)	(1,888.4)	(788.1)	(768.2)	(774.8)	(768.8)	(3,088.8)
Interest expense	78.8	63.0	107.0	59.0	288.9	105.0	104.0	98.4	98.9	487.8	98.2	98.2	98.0	98.0	487.8	98.2	98.2	98.2	98.2	487.8
Other	(54.0)	(56.0)	(367.0)	(1,565.0)	(2,062.0)	(15.0)	(3.0)	-	-	(34.0)	-	-	-	-	-	-	-	-	-	-
Pre-tax income	(7,624.8)	(6,802.8)	(7,362.8)	(9,468.8)	(28,226.8)	(382.8)	(291.8)	(228.1)	(277.8)	(167.1)	(253.3)	(258.4)	(286.2)	(620.8)	(1,688.9)	(686.4)	(668.8)	(676.8)	(677.2)	(2,603.1)
Income tax	(3,038.8)	(880.8)	(791.0)	(794.0)	(6,489.8)	(110.8)	(91.0)	(61.8)	(88.9)	(84.4)	(104.2)	(121.7)	(128.1)	(187.8)	(641.1)	(238.3)	(227.7)	(244.2)	(254.3)	(884.8)
Effective tax rate %	40.1%	15.1%	12.5%	8.2%	34.4%	2.9%	28.2%	35.8%	35.6%	48.4%	35.1%	35.0%	36.0%	36.0%	54.6%	36.0%	35.0%	35.0%	35.0%	37.8%
After Tax Income	(4,686.0)	(4,882.8)	(6,611.8)	(7,878.8)	(20,737.0)	(371.8)	(200.8)	(146.3)	(178.8)	(248.1)	(188.1)	(216.8)	(258.1)	(258.8)	(848.8)	(448.6)	(440.1)	(432.6)	(422.8)	(1,718.3)
Minority Interest/Preferred Dividends	147.0	768.0	104.0	(657.0)	362.0	1.0	44.0	53.4	52.7	151.1	47.4	54.3	54.5	66.9	222.2	69.2	71.0	71.8	72.1	284.1
Net Income	(4,833.0)	(4,886.8)	(6,866.8)	(7,213.8)	(20,375.0)	(372.8)	(244.8)	(92.9)	(126.1)	(93.0)	(140.7)	(162.5)	(173.6)	(265.1)	(726.6)	(379.4)	(369.1)	(360.8)	(350.7)	(1,434.2)
Non-recurring items	4,512.0	5,652.0	5,524.5	7,189.0	28,817.5	93.0	145.0	-	-	(385.8)	-	-	-	-	-	-	-	-	-	-
Adjusted net income	(199.8)	82.8	(29.3)	(34.8)	(191.4)	(54.8)	(99.8)	98.0	(28.1)	(199.8)	(140.7)	(162.5)	(173.6)	(265.1)	(726.6)	(379.4)	(369.1)	(360.8)	(350.7)	(1,434.2)
Adjusted EPS - Adjusted	\$ 0.27	\$ 0.22	\$ 0.00	\$ 0.00	\$ 0.27	\$ 0.40	\$ 0.29	\$ 0.25	\$ 0.23	\$ 0.41	\$ 0.37	\$ 0.43	\$ 0.48	\$ 0.70	\$ 1.00	\$ 0.89	\$ 0.85	\$ 0.89	\$ 0.91	\$ 0.78
EBITDA	988.9	1,286.8	788.9	781.5	3,854.5	623.8	727.8	1,054.7	1,118.3	2,643.5	1,136.7	1,106.5	1,220.5	1,412.8	4,871.5	1,624.2	1,591.1	1,608.5	1,622.5	3,894.7
EBITDA	978.8	688.8	886.8	888.8	3,854.5	648.8	682.8	1,014.4	1,048.3	2,533.3	1,063.2	1,112.4	1,142.8	1,388.8	4,822.5	1,488.4	1,446.8	1,474.8	1,487.7	3,894.7
DAFC	377.0	378.0	378.0	378.2	377.8	378.0	379.0	379.0	379.0	378.8	379.0	379.0	379.0	379.0	378.0	379.0	379.0	379.0	379.0	378.8
Per Unit Costs (\$/bbl)																				
Less operating expense	\$ 9.86	\$ 9.10	\$ 9.82	\$ 10.05	\$ 9.48	\$ 7.82	\$ 7.37	\$ 6.51	\$ 6.57	\$ 7.98	\$ 6.63	\$ 6.58	\$ 6.40	\$ 6.37	\$ 6.47	\$ 6.44	\$ 6.32	\$ 6.17	\$ 6.16	\$ 6.37
Taxes other than income	\$ 1.58	\$ 1.07	\$ 2.89	\$ 1.10	\$ 1.44	\$ 0.23	\$ 1.33	\$ 0.91	\$ 0.96	\$ 0.88	\$ 1.02	\$ 1.01	\$ 1.02	\$ 1.05	\$ 1.02	\$ 1.14	\$ 1.14	\$ 1.15	\$ 1.16	\$ 1.16
Gathering, processing, transportation	\$ 1.15	\$ 0.96	\$ 1.16	\$ 1.06	\$ 1.88	\$ 1.08	\$ 1.07	\$ 1.02	\$ 1.08	\$ 1.94	\$ 0.97	\$ 0.92	\$ 0.96	\$ 0.91	\$ 0.89	\$ 0.88	\$ 0.76	\$ 0.72	\$ 0.70	\$ 0.74
DDA	\$ 22.19	\$ 19.51	\$ 16.26	\$ 18.54	\$ 18.74	\$ 16.02	\$ 13.73	\$ 12.47	\$ 13.55	\$ 15.88	\$ 13.91	\$ 13.79	\$ 13.91	\$ 13.76	\$ 18.02	\$ 13.52	\$ 13.52	\$ 13.76	\$ 13.76	\$ 18.02
GSA	\$ 1.88	\$ 2.16	\$ 1.72	\$ 2.16	\$ 1.89	\$ 1.92	\$ 2.11	\$ 2.00	\$ 2.00	\$ 2.81	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.80	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.80
Interest	\$ 1.44	\$ 1.23	\$ 2.15	\$ 1.30	\$ 1.68	\$ 2.17	\$ 2.13	\$ 2.00	\$ 2.05	\$ 2.81	\$ 2.08	\$ 2.01	\$ 1.96	\$ 1.91	\$ 2.80	\$ 1.94	\$ 1.84	\$ 1.81	\$ 1.67	\$ 1.81
Cash Flow (\$ in millions)																				
Net income (loss)	(4,636.8)	(5,564.0)	(5,646.0)	(7,562.0)	(20,628.8)	(361.8)	(200.8)	(146.3)	(178.8)	(248.1)	(188.1)	(216.8)	(258.1)	(258.8)	(848.8)	(448.6)	(440.1)	(432.6)	(422.8)	(1,718.3)
DDA	6,887.8	6,777.0	6,628.0	5,539.0	31,282.8	1,882.0	268.0	688.2	684.7	2,878.8	657.2	672.8	684.4	706.5	3,778.1	783.1	716.7	734.8	738.1	2,881.8
Other non-cash items	(2,871.0)	(627.0)	(154.0)	(1,108.0)	(4,780.8)	(86.0)	(11.0)	(105.6)	(113.9)	(188.6)	(114.7)	(125.7)	(131.5)	(173.8)	(644.1)	(199.1)	(210.4)	(220.2)	(227.3)	(868.8)
Change in working capital	988.9	688.8	886.8	888.8	3,854.5	648.8	682.8	1,014.4	1,048.3	2,533.3	1,063.2	1,112.4	1,142.8	1,388.8	4,822.5	1,488.4	1,446.8	1,474.8	1,487.7	3,894.7
Cash flow from operations	668.9	1,355.8	788.9	388.9	2,884.5	278.9	682.0	918.1	947.6	3,634.5	988.8	1,014.3	1,048.9	1,211.8	4,238.9	1,288.8	1,355.8	1,379.7	1,416.4	2,467.8
Capital expenditures	(2,083.0)	(1,832.0)	(983.0)	(713.0)	(4,811.0)	(602.0)	(441.0)	(563.5)	(563.5)	(2,178.1)	(817.3)	(842.3)	(932.5)	(937.5)	(3,661.7)	(1,064.0)	(1,063.7)	(1,063.7)	(1,063.0)	(4,264.4)
Other investment items	(35.0)	5,182.0	(22.0)	362.0	6,487.8	90.0	67.0	-	-	77.8	-	-	-	-	-	-	-	-	-	-
Change in debt	1,828.8	(2,586.0)	(939.0)	-	(2,689.0)	-	-	-	-	-	-	-	-	-	-	(1,038.0)	-	(688.8)	-	(668.8)
Change in equity	(21.0)	(30.0)	(95.0)	(32.0)	(128.0)	(54.0)	(39.0)	(30.0)	(30.0)	(163.8)	(30.0)	(30.0)	(30.0)	(30.0)	(128.8)	(30.0)	(30.0)	(30.0)	(30.0)	(128.8)
Other financing items	(79.3)	(93.8)	(94.0)	(67.0)	(254.0)	(33.0)	(37.0)	(34.8)	(34.8)	(279.8)	(94.8)	(94.8)	(94.8)	(94.8)	(279.8)	(94.8)	(94.8)	(94.8)	(94.8)	(279.8)
Change in cash	(649.0)	2,711.8	(1,286.9)	(1,188.0)	(884.0)	(483.0)	(116.0)	(227.8)	(358.2)	(91.0)	(74.8)	(48.7)	(157.1)	(128.1)	(776.0)	(181.0)	(161.8)	(288.7)	(286.8)	(163.8)
Ending cash	229.8	2,849.9	1,662.9	1,467.8	1,467.8	1,894.0	1,291.8	1,428.6	1,888.9	1,888.6	1,766.4	1,762.9	1,798.9	1,867.4	1,867.4	1,827.2	1,866.1	1,796.4	2	



IMPORTANT DISCLOSURES

Analyst's Certification

I, Philip Jungwirth, hereby certify that the views expressed in this report accurately reflect my personal views about the subject securities or issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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Disclosure 6C: Apache is a client (or was a client) of BMO Nesbitt Burns Inc., BMO Capital Markets Corp., BMO Capital Markets Limited or an affiliate within the past 12 months: C) Non Securities Related Services.

Disclosure 9: BMO Capital Markets makes a market in Apache.

Methodology and Risks to Price Target/Valuation for Apache (APA-NYSE)

Methodology: Our target prices based on an NAV analysis and review of comparable company trading multiples.

Risks: Risks to our rating and target price include negative changes in overall commodity prices, specific natural gas and oil prices, weakness in U.S. and global economic activity and demand for natural gas and oil, and elevated natural gas storage levels from increased supply growth.

Distribution of Ratings (September 07, 2016)

Rating category	BMO Rating	BMOCM US Unverse*	BMOCM US B Clients**	BMOCM US B Clients***	BMOCM Unverse****	BMOCM B Clients*****	Stamne Unverse
Buy	Outperform	40.3%	20.1%	54.9%	41.4%	52.9%	54.7%
Hold	Market Perform	55.9%	10.9%	41.5%	55.0%	44.8%	39.8%
Sell	Underperform	3.8%	14.3%	3.7%	3.4%	1.8%	5.5%

* Reflects rating distribution of all companies covered by BMO Capital Markets Corp. equity research analysts.

** Reflects rating distribution of all companies from which BMO Capital Markets Corp. has received compensation for investment banking services as percentage within ratings category.

*** Reflects rating distribution of all companies from which BMO Capital Markets Corp. has received compensation for investment banking services as percentage of investment banking clients.

**** Reflects rating distribution of a company as covered by BMO Capital Markets equity research analysts.

***** Reflects rating distribution of a company as from which BMO Capital Markets has received compensation for investment banking services as percentage of investment banking commissions.

Ratings and Sector Key (as of April 5, 2013)

We use the following ratings system definitions:

OP Outperform Forecast to outperform the analyst's coverage universe on a total return basis;

Mkt Market Perform Forecast to perform roughly in line with the analyst's coverage universe on a total return basis;

Und Underperform Forecast to underperform the analyst's coverage universe on a total return basis;

(S) Speculative investment;

NR No rating at this time; and

R Restricted Dissemination of research is currently restricted.

BMO Capital Markets serves top 15 stockholders to our best clients according to different objectives (CDN Large Cap, CDN Small Cap, US Large Cap, US Small Cap, Income, CDN Quant, and US Quant have replaced the top Pick rating).

Prior BMO Capital Markets Rating System (January 4, 2010 – April 5, 2013)

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